

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A computer system, comprising:

a first computer executing graphical user interface software including editor software adapted to modify a settings management user interface enabling substantially full functionality of settings configuration for an intelligent electronics device, said editor software adapted to create and save an application design file pertaining to properties of a customized settings management user interface upon command, said properties of said customized settings management user interface being based on modifications made to said settings management user interface, said first computer having a storage unit, said storage unit being in communication with said graphical user interface software of said first computer and being able to store said application design file upon command; and

a second computer executing graphical user interface software including display software and being in communication with said first computer and adapted to receive said application design file from said first computer, said second computer display software being adapted to execute said application design file to cause said customized settings management user interface to be displayed by said second computer, said customized settings management user interface including display of a configurable setting for said intelligent electronics device, said second computer being adapted to receive a command related to configuration of said configurable setting, said second computer being in communication with said intelligent electronics device and being able to deliver data related to said configurable setting to said intelligent electronics device.

2. (Previously Presented) The computer system of claim 1, wherein access to the editor software to modify the settings management user interface is restricted to persons having a first level of access, and wherein access to the display software to execute said application design file is restricted the persons having the first level of access and persons having a second level of access, the second level of access more restricted than the first level of access and controllable by the persons having the first level of access to minimize configuration errors.

3. (Previously Presented) A method for customizing a settings management user interface (SMUI) system to minimize configuration errors when configuring a plurality of configurable IED settings for an intelligent electronic device (IED) via the SMUI system, the SMUI system operatively coupled to the IED, the method comprising:

- enabling accessibility to a first plurality of graphical user interfaces of the SMUI system by persons having a first level of access;

- enabling accessibility to a second plurality of graphical user interfaces of the SMUI system by persons having a second level of access, the second level of access more restricted than the first level of access and controllable by the persons having the first level of access;

- in response to detecting a valid request to access the first plurality of graphical user interfaces, causing a first graphical user interface of the first plurality of graphical user interfaces to be displayed, the first graphical user interface of the first plurality of graphical user interfaces including a selectable hierarchical listing of the plurality of configurable IED settings;

- detecting selection of at least one configurable IED setting from the plurality of configurable IED settings by a first person of the persons having the first level of access;

- causing a second graphical user interface of the first plurality of graphical user interfaces to be displayed, the second graphical user interface of the first plurality of graphical user interfaces displaying the at least one configurable IED setting for a first modification by the first person;

- detecting completion of the first modification, the first modification and the remainder of the plurality of configurable IED settings forming an application design file of the SMUI system, the application design file specific to the IED;

- in response to detecting a valid request to access the second plurality of graphical user interfaces, causing a first graphical user interfaces of the second plurality of graphical user interfaces to be displayed, the first settings display of the second plurality graphical user interfaces including the application design file for a second modification by a second person of the persons having the second level of access;

- detecting completion of the second modification to the application design file by the second person, completion of the second modification of the application design file enabling a final plurality of tailored IED settings to be formed from the modified application design file;

and

causing the final plurality of tailored IED settings to be provided to the IED in response to a command by the second person.

4. (Previously Presented) The method of claim 3, further including causing the application design file to be displayed to the second person via the first graphical user interface of the second plurality of graphical user interfaces.

5. (Previously Presented) The method of claim 3, wherein the SMUI system further comprises:

- a microcontroller including a microprocessor and a memory operatively coupled to the microprocessor;

- a display configured to display the first and second plurality of graphical user interfaces;

- a first peripheral device coupled to the microcontroller and configured to enable local and remote access to the first and second plurality of graphical user interfaces by persons having the first and second level of access, respectively; and

- a second peripheral device coupled to the microcontroller and configured to enable communication between the IED and the settings management interface system.

6. (Previously Presented) The method of claim 3, wherein the SMUI system further comprises:

- a first computer including:

- a first microcontroller including a microprocessor and a memory operatively coupled to the microprocessor,

- a first display configured to display the first plurality of graphical user interfaces to the persons having the first level of access, and

- a first peripheral device coupled to the first microcontroller and configured to enable local and remote access to the first plurality of graphical user interfaces by the persons having the first level of access; and

- a second computer operatively coupled to the first computer and the IED, the second computer including:

- a second microcontroller including a microprocessor and a memory operatively coupled to the microprocessor,

a second display configured to display the second plurality of graphical user interfaces to the persons having the second level of access, and

a second peripheral device coupled to the second microcontroller and configured to enable local and remote access to the second plurality of graphical user interfaces by the persons having the second level of access.

7. (Previously Presented) The method of claim 3, wherein the first modification comprises limiting the plurality of configurable IED settings available for settings value changes by the second person to only the at least one configurable IED setting.

8. (Previously Presented) The method of claim 3, wherein the first modification comprises limiting the plurality of configurable IED settings visible to the second person to the at least one configurable IED setting.

9. (Previously Presented) The method of claim 3, wherein the first modification comprises changing an IED setting name associated with the at least one configurable IED setting.

10. (Previously Presented) The method of claim 3, wherein the first modification comprises changing an IED setting value unit associated with the at least one configurable IED setting.

11. (Previously Presented) The method of claim 3, wherein the first modification comprises changing an IED value range associated with the at least one configurable IED setting.

12. (Previously Presented) The method of claim 3, further comprising setting an indication to alert the second person when the second modification causes one of the plurality of configurable IED settings to have a value outside of a predetermined IED value range.

13. (Previously Presented) The method of claim 3, further comprising preventing the final plurality of tailored IED settings to be delivered to the IED if one of the plurality of configurable IED settings has been assigned a value outside of a predetermined IED value range.

14. (Previously Presented) The method of claim 3, wherein the first modification comprises changing a text comment associated with the at least one configurable IED setting.

15. (Previously Presented) The method of claim 3, wherein the first modification comprises changing a language associated with the at least one configurable IED setting.

16. (Previously Presented) The method of claim 3, wherein the first modification comprises regrouping the at least one configurable IED setting.

17. (Previously Presented) The method of claim 16, wherein the first modification further comprises re-naming the at least one regrouped configurable IED setting for ease of locating by the second person.

18. (Previously Presented) The method of claim 3, wherein the first modification comprises causing the at least one configurable IED setting to be available for setting value changes by the second person.

19. (Previously Presented) The method of claim 3, wherein the first modification comprises configuring at least two of the plurality of configurable IED settings to ensure that they have identical setting values when the second person assigns a setting value to one of the at least two of the plurality of configurable IED settings.

20. (Previously Presented) The method of claim 3, wherein the first modification further comprises editing, via a third graphical user interface of the first plurality of graphical user interfaces, a mathematical equation associated with the at least one of the plurality of configurable IED settings.

21. (Previously Presented) The method of claim 20, wherein the third graphical user interface of the first plurality of graphical user interfaces comprises an Equation Builder graphical user interface.

22. (Previously Presented) The method of claim 20, wherein the at least one configurable IED setting is a customized IED setting of the plurality of configurable IED settings, and wherein the first modification comprises constructing a Boolean logic equation associated with the customized IED setting via the third graphical user interface of the first plurality of graphical user interfaces.

23. (Previously Presented) The method of claim 22, wherein the customized IED setting is configured to control an aspect of IED operation during testing of the IED using the final plurality of tailored IED settings.

24. (Previously Presented) The method of claim 22, further comprising:

uploading a plurality of actual IED settings from the IED to the SMUI system for comparison with the application design file; and

providing an error indication to the second person if differences are detected between plurality of actual IED settings and the application design file.

25. (Previously Presented) The method of claim 3, wherein the second modification comprises entering a first setting value for the at least one configurable IED setting, and wherein the first modification comprises causing a second setting value to be calculated for the at least one configurable IED setting based on the first setting value when the first setting value is entered.

26. (Previously Presented) The method of claim 3, wherein the second modification comprises changing at least one setting value of the plurality of configurable IED settings.

27. (Previously Presented) The method of claim 3, wherein the persons having the first level of access include application interface designers, and wherein the persons having the second level of access include IED field end-users.

28. (Previously Presented) The method of claim 3, wherein the first graphical user interface of the first plurality of graphical user interfaces further comprises:

a selectable plurality of dialog boxes configured to receive IED settings values and text;

a selectable plurality of configurable control equations and associated logic simulators;
a selectable plurality of virtual buttons associated with IED configuration activities; and
a tool bar having a number of selectable pull-down menus associated with the plurality of IED settings.

29. (Previously Presented) The method of claim 3, wherein the first graphical user interface of the first plurality of graphical user interfaces comprises an editor mode graphical user interface.

30. (Previously Presented) The method of claim 3, wherein the second graphical user interface of the first plurality of graphical user interfaces comprises an setting form graphical user interface.

31. (Previously Presented) The method of claim 3, wherein the first graphical user interface of the second plurality of graphical user interface comprises an editor mode graphical user interface.

32. (Previously Presented) A method for customizing a settings management user interface (SMUI) system to minimize configuration errors when configuring a plurality of settings for an intelligent electronic device (IED) via the SMUI system, the SMUI system operatively coupled to the IED, the method comprising:

enabling accessibility to a first plurality of graphical user interfaces of the SMUI system by persons having a first level of access;

enabling accessibility to a second plurality of graphical user interfaces of the SMUI system by persons having a second level of access, the second level of access more restricted than the first level of access and controllable by the persons having the first level of access; [[3]]

in response detecting a valid request to access the first plurality of graphical user interfaces, displaying a first graphical user interface of the first plurality of graphical user interfaces, the first graphical user interface of the first plurality of graphical user interfaces including a selectable hierarchical listing of a plurality of configurable IED settings associated with the IED;

detecting selection of at least one configurable IED setting from the plurality of

configurable IED settings by a first person of the persons having the first level of access;

causing a second graphical user interface of the first plurality of graphical user interfaces to be displayed, the second graphical user interface of the first plurality of graphical user interfaces displaying the at least one configurable IED setting;

detecting a request to prevent persons having the second level of access from providing the at least one configurable IED setting to the IED, the plurality of configurable IED settings excluding the at least one configurable IED setting forming an application design file of the SMUI system, the application design file specific to the IED;

in response to a valid request to access the second plurality of graphical user interfaces, causing a first graphical user interface of the second plurality of graphical user interfaces to be displayed, the first graphical user interface of the second plurality of graphical user interfaces displaying the application design file for a modification by a second person of the persons having the second level of access;

detecting completion of the modification to the application design file by the second person, completion of the modification enabling a final plurality of tailored IED settings to be formed from the modified application design file, the final plurality of tailored IED settings excluding the at least one configurable IED setting; and

causing the final plurality of tailored IED settings to be provided to the IED in response to a command by the second person.

33. (Previously Presented) The method of claim 32, further including causing the application design file to be displayed to the second person via the first graphical user interface of the second plurality of graphical user interfaces.

34. (Previously Presented) The method of claim 32, wherein the SMUI system further comprises:

a microcontroller including a microprocessor and a memory operatively coupled to the microprocessor;

a display configured to display the first and second plurality of graphical user interfaces;

a first peripheral device coupled to the microcontroller and configured to enable local and remote access to the first and second plurality of graphical user interfaces by the persons having

the first and second level of access, respectively; and

a second peripheral device coupled to the microcontroller and configured to enable communication between the IED and the settings management interface system.

35. (Previously Presented) The method of claim 32, wherein the SMUI system further comprises:

a first computer including:

a first microcontroller including a microprocessor and a memory operatively coupled to the microprocessor,

a first display configured to display the first plurality of graphical user interfaces, and

a first peripheral device coupled to the first microcontroller and configured to enable local and remote access to the first plurality of graphical user interfaces by the persons having the first level of access; and

a second computer operatively coupled to the first computer and the IED, the second computer including:

a second microcontroller including a microprocessor and a memory operatively coupled to the microprocessor,

a second display configured to display the second plurality of graphical user interfaces, and

a second peripheral device coupled to the second microcontroller and configured to enable local and remote access to the second plurality of graphical user interfaces by persons having the second level of access.

36. (Previously Presented) The method of claim 32, wherein the persons having the first level of access include application interface designers, and wherein the persons having the second level of access include IED field end-users.

37. (Previously Presented) The method of claim 32, wherein the first graphical user interface of the first plurality of graphical user interfaces further comprises:

a selectable plurality of dialog boxes configured to receive IED settings values and text;

a selectable plurality of configurable control equations and associated logic simulators;
a selectable plurality of virtual buttons associated with IED configuration activities; and
a tool bar having a number of selectable pull-down menus associated with the plurality of IED settings.

38. (Previously Presented) The method of claim 32, wherein the first graphical user interface of the first plurality of graphical user interfaces comprises an editor mode graphical user interface.

39. (Previously Presented) The method of claim 32, wherein the second graphical user interface of the first plurality of graphical user interfaces comprises an setting form graphical user interface.

40. (Previously Presented) The method of claim 32, wherein the first graphical user interface of the second plurality of graphical user interfaces comprises an editor mode graphical user interface.